REMARKS

Claims 1 and 4-21 are pending in this application, with Claims 2 and 3 cancelled and Claims 1, 4-12 and 14-21 amended. The Applicants respectfully request reconsideration and review of the application in view of the amendments and the following remarks.

First, Applicants acknowledge with appreciation the indication of allowable subject matter in Claims 7, 8 and 16. Per the Examiner's suggestion, Applicants have rewritten Claims 7 and 16 into independent form, including all of the limitations of the base claims and any intervening claims. Therefore, Claims 7, 8 and 16 are now considered to be in condition for allowance.

Second, the Examiner objected to the specification for failing to include a serial number of an earlier filed application on page 9 of the specification. The Examiner also objected to Claim 6 for including a typographical error (*i.e.*, "a four bits of a twenty-three bit signal packet"). Accordingly, Applicants have amended the specification to include the missing serial number, and have amended Claim 6 to correct the inadvertent typographical error. Therefore, these objections should be withdrawn.

Before addressing the merits of the rejections based on prior art, Applicants provide the following brief description of the invention. The present invention is directed toward a bi-directional communication protocol for a model vehicle. In one embodiment of the present invention, the bi-directional communication protocol is derived from (or adapted from), and therefore compatible with, a uni-directional communication protocol.

In a second embodiment of the present invention, the bi-directional communication protocol is identified by altering an error detection code in the uni-directional communication protocol. For example, Figure 3 exemplifies an existing uni-directional communication protocol that includes four data nibbles (300, 302, 304 and 306), an error nibble (308), a phase bit (309) and two trailer bits (310). In accordance with the second embodiment of the present invention, the error nibble (308) can be altered to identify the communication protocol as being bi-directional.

For example, as shown on page 10, lines 20-24, if the error nibble (308) is a sum of the four data nibbles (300-306), then the command packet can be identified as an "old command." If, however, the error nibble (308) is, for example, a complement of the sum of the four data nibbles (300-306), then the command packet can be identified as a "new command." This would allow, for example, a new model vehicle to identify a old and new command as a uni-directional command and a bi-directional command, respectively. It would also allow, for example, a legacy model vehicle to identify an old and new command as a uni-directional command and a communication error (*i.e.*, an old command with a faulty error detection code), respectively. Claims 1, 12 and 18 have been amended to incorporate portions of the foregoing embodiments.

The Examiner rejected Claim 18 under 35 U.S.C. § 102(b) as being anticipated by Grubba et al. (U.S. Pub. No. 2005/0285552). The Examiner also rejected Claims 1-4, 9-15 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Grubba et al. ("Grubba") in view of Lo Galbo et al. (U.S. Pat. No. 5,280,629). The Examiner also rejected Claims 5 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Grubba in view of Lo Galbo et al. ("Lo Galbo") and Uota (U.S. Pat. No. 6,292,470). The Examiner also rejected Claims 19-21 under 35 U.S.C. § 103(a) as being unpatentable over Grubba in view of Uota. The Applicants respectfully traverse these rejections.

Grubba is directed toward a control system for a model train, including a uni-directional control system (*see* Fig. 1) and a bi-directional control system (*see* Fig. 2). While Grubba states that the bi-directional control system can be implemented using a 400 MHz communication signal (*see* Para. 0076), Grubba fails to disclose any particular communication protocol, let alone a bi-directional communication protocol that is ***derived from*** and ***compatible with*** a unidirectional communication protocol. ***Grubba also fails to disclose a bi-directional communication protocol that is identified by altering at least an error detection portion of a uni-directional communication protocol.*** In other words, Grubba fails to disclose a command signal that is interpreted by a first (*e.g.*, new) model vehicle as being bi-directional, and by a second (*e.g.*,

legacy) model vehicle as being a communication error, or a uni-directional command signal with a faulty error detection code.

These features are also not disclosed in Lo Galbo or Uota. While Lo Galbo, which is directed toward a method of measuring signal delay, provides results that may include errors (*see, e.g.,* col. 1, ll. 31-34 and col. 8, ll. 5-7), it fails to disclose a bi-directional communication protocol that is identified by altering an error detection portion of a uni-directional communication protocol. Uota, which is directed toward a method of transmitting an error to a source for the retransmission of a particular signal, also does not disclose this feature.

More particularly, neither Grubba, Lo Galbo nor Uota disclose or suggest "[a] method of conducting bi-directional communication with a model vehicle *utilizing a bid-directional communication protocol derived from an existing uni-directional communication protocol*, the method comprising: transmitting a command inquiry signal to the model vehicle from a control unit during a first communication period; automatically pausing transmission by the control unit during the entirety of a second communication period immediately following the first communication period; and automatically resuming transmission by the control unit at the conclusion of the second communication period; *wherein the model vehicle is configured to transmit a response signal to the command inquiry signal during the second communication period, and a legacy model vehicle, which is configured to interpret only the existing uni-directional communication protocol, is configured to interpret the command inquiry signal as a communication error.*" *See* Claim 1. These references also fail to disclose or suggest the foregoing method, "*wherein the bi-directional communication protocol is derived by varying a state of an error detection code of the uni-directional communication protocol.*" *See* Claim 5. Therefore, the rejection of independent Claim 1, and the rejections of independent Claims 12 and 18, which included similar limitations, should be withdrawn. Further, the rejections of Claims 4-11, 13-17 and 19-21, which depend from the foregoing
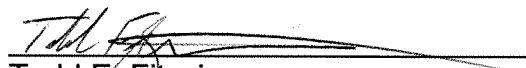
independent claims, should also be withdrawn.

In view of the foregoing, the Applicants respectfully submit that Claims 1 and 4-21 are in condition for allowance. Reconsideration and withdrawal of the rejections is respectfully requested, and a timely Notice of Allowability is solicited. To the extent it would be helpful to placing this application in condition for allowance, Applicants encourage the Examiner to contact the undersigned counsel and conduct a telephonic interview.

To the extent necessary, the Commissioner is authorized to charge $210 for the later presentation of two independent claims in excess of three, pursuant to 37 C.F.R. § 1.16(h), and any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0639.

Respectfully submitted,

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